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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,913	01/16/2004	Oren Eliezer	TI-35771	7083

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EXAMINER	
SINGH, RAMNANDAN P	

ART UNIT	PAPER NUMBER
2614	

NOTIFICATION DATE	DELIVERY MODE
07/06/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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	Application No.	Applicant(s)	
Office Action Summary	10/758,913	ELIEZER ET AL.	
	Examiner	**Art Unit**	
	Ramnandan Singh	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-11, 14-21, 24-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Summers et al [US 6,181,258 B1] in view of Harrow et al [US 7,046,792 B2].

Regarding claim 24, Summers et al teach an apparatus for estimating modulation noise in a transmitter (800), comprising:

first means(162) for estimating frequency deviation errors of a signal output from the transmitter utilizing measurements of a phase error signal observed within a phase locked loop in the transmitter [Fig. 3; col. 6, lines 7-14];

second means (164) for comparing a plurality of phase error signal samples over a period of time to a threshold and generating an exception event each time a phase error signal sample exceeds the threshold [Fig. 6;

col. 7, line 49 to col. 8, line 31; Figs. 8-11; col. 8, line 55 to col. 9, line 61; Figs. 16B-16C; col. 15, lines 12-53].

Although Summers et al teach using a state machine (166) [Figs. 3, 6], Summers et al do not teach expressly a failure and pass indicator based on counts.

Harrow et al teach generating a failure indication if the number of exception events exceeds a criteria and generating a pass indication otherwise (i.e. an arbitrator) based on counts [Fig. 2; col. 4, lines 1-22].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the arbitrator having the counter and the counter threshold of Horrow et al with the state machine of Summers et al in order to determine when to compensate the modulation error.

Claims 1 and 14 are essentially similar to claim 24 and are rejected for the reasons stated above.

Regarding claim 25, Summers te al teach the apparatus, wherein the phase error signal comprises a digital sample being generated from a digital transmitter [Fig. 17; col. 15, lines 26-39].

Regarding claim 26, Summers te al teach the apparatus, wherein the phase error signal comprises an analog sample [col. 5, lines 29-37].

Regarding claim 27, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to make a design choice, wherein the threshold is configurable.

Claims 28-31 are rejected for the same reasons as stated in claim 27 above.

Regarding claims 32-33, Summers et al further teach testing software and DSP implementation [Fig. 4; col. 6, lines 60-67; col. 13, lines 59-67; col. 14, lines 7-15].

Regarding claim 10, Summers et al further teach, wherein the transmitter is used in a wireless communications network [Fig. 3].

Regarding claims, 2-9, 11, 15-21, the limitations are shown above.

3. Claims 13, 23, 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Summers et al as applied to claims 24, 1, 14 above, and further in view of Blazo [US 5,754,437].

Regarding claims 13, 23, 35, Summers et al do not teach expressly implementing the apparatus in a Field Programmable Gate Array (FPGA).

Blazo teaches implementing an apparatus in a Field Programmable Gate Array (FPGA) [col. 14, lines 58-65].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the technique of Blazo with Summers te al in order to implement the apparatus in an FPGA to produce cheaply in mass production.

4. Claims 12, 22, 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Summers et al as applied to claims 1, 14, 24 above, and further in view of Sugar et al [US 6,714,605 B2].

Regarding claims 12, 22, 34, Summers et al do not teach expressly implementing the apparatus in an Application Specific Integrated Circuit (ASIC).

Sugaer et al teach implementing an apparatus in in an Application Specific Integrated Circuit (ASIC) [col. 3, lines 3-23].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the technique of Suger et al with

Summers et al in order to implement the apparatus in an ASIC to produce cheaply in mass production.

5. Claims 1, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida et al [US 7,203,229 B1] in view of harrow et al [US 7,046,792 B2].

Regarding claim 1, Ishida et al teach method of estimating modulation noise for use in a transmitter having a phase locked loop, the method comprising the steps of:

calculating an average of historical samples of phase error samples produced by the phase locked loop [Fig. 23];

subtracting the average from a current phase error sample to yield a normalized phase error; and

generating an exception event if the normalized phase error exceeds a threshold; and repeating the steps of calculating, subtracting [Figs. 23-30; col. 14, line 25 to col. 19, line 46].

Ishida et al do not teach expressly a failure and pass indicator based on counts.

Harrow et al teach generating a failure indication if the number of exception events exceeds a criteria and generating a pass indication otherwise (i.e. an arbitrator) based on counts [Fig. 2; col. 4, lines 1-22].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the arbitrator having the counter and the counter threshold of Horrow et al with Ishida et al in order to determine when to compensate the modulation error.

Claim 14 is essentially similar to claim 1 and 1 rejected for the reasons stated above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramnandan Singh whose

telephone number is (571) 272-7529. The examiner can normally be reached on M-TH (8:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (571) 272-7547. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ramnandan Singh
Examiner
Art Unit 2614